Director, ARPA
Office of Naval Research
2110 G Street, N.W.
Washington, D.C. 20007, U.S.A.

Quarterly Letter Report July 1st 1.65 - September 30th 1.65.

ARPA Order No. 306
Program Code 4730

Contract Nonr -4654(00)
Expires 30 September 1.66

Contractor
Uppsala University
Sweden

Project Scientist
Prof. Stig Claesson
Institute of Physical Chemistry
Uppsala, Sweden Phone 13 14 60

Date of Contract
1 October 1.64

Title
Fluorescence and fluorescence conversion

Amount $ 25,000

Sir.

The work has progressed according to general plans under the period stated.

The investigations on the effect of ionic charge on the quenching of fluorescence by Dr. Holmström and Mr. Tegnér which were mentioned in the previous Letter Reports have been finished according to plans, the manuscript completed and written as a Scientific and Technical Report No. 1 which was sent to your office on September 17 (one copy is included here for completeness). It has been accepted for publication by the Journal of Photochemistry and Photobiology.

Also the work mentioned previously on improved liquid filters for work in the ultraviolet and visible regions of the spectrum has been finished. Dr. Wladimiroff has completed the manuscript describing this work and it is enclosed as Scientific

and Technical Report No. 2. It will be sent to Journal of Photochemistry and Photobiology for publication.

For the work on fluorescence conversion it is of great importance to have good coupling between the lamps and the receiver of the radiation (ultimately the laser rod). Several new reflectors have been built for that purpose and we have tried reflectors covered with MgO to obtain high reflectivity also in the ultraviolet region. The diameter of these reflectors has been made larger than what has been usual up till now. Small amounts of polymer binding material have been added to the MgO powder which makes the reflector very much stronger without reducing the reflectivity very much. From a practical point of view that is a very great improvement. Earlier the MgO-layer had a tendency to come off at the most inconvenient moments. This technique will also be used to prepare some solid fluorescence converters to use as a comparison with our liquid fluorescence converters.

On Thursday, September 2nd, Dr. Irving Rowe from the Office of Naval Research, New York, visited our laboratories. He made a very thorough inspection of all our scientific work in progress, met the people working on the project and looked at all our experimental facilities.

As before Dr. Wahringbauer, Mr. Biddle, Mr. Rimme, Mr. Nordin and Mr. Papdi have taken part in this work as well as the scientists mentioned above (Holmström, Tegnér, Wladimiroff).

Yours very sincerely,

Stig Claesson
Professor

Uppsala, October 19, 1965

cc: Head, Physics Branch
Physical Sciences Division
Office of Naval Research
Washington, D.C. 20360, U.S.A.

1 copy of Scientific and Technical Report No 2